INTERMEDIATE SCIENCE

SCORING GUIDES
FOR
RELEASED ITEMS

Missouri Assessment Program
Spring 1998

INTERMEDIATE SCIENCE *SCORING* GUIDE

for MAP released items

Spring, 1998

ITEM 1-3 points

    Content Standard: V.B.2
    Process Standard: 1.10

    Possible Answers: Earth has an atmosphere.
    Earth has gases necessary to sustain life/living cells, including oxygen, carbon, hydrogen, nitrogen, phosphorus, and sulfur.
    Earth has water.
    Earth is warm/not too hot or too cold.
    Earth is neither too far from the sun not too close.
    Energy for life on Earth is generated from the sun.
    Earth has the appropriate materials for life (e.g., rocks, soil, or solid places to stand or grow on).
    Earth has the appropriate chemicals and minerals for life to evolve (e.g., amino acids, protein).
    (Any response indicating a valid understanding of an important characteristic of Earth that makes it possible for Earth to sustain life.)

    Scoring: 3 elements = 3 points
                2 elements = 2 points
                1 element = 1 point
                0 elements = 0 points

ITEM 2-3 points

    Content Standard: II.C.2
    Process Standards: 2.1, 1.10

    Answer to first question: Something that is discovered already exists in nature and something that is invented is created or made by humans.

(ITEM 2, continued)

Possible answers to second question:

<u>Discovery</u>
America
gold
silver
copper
rubber (raw form)
DNA
microbes
(any response that indicates an appropriate discovery
NOT archaeological discoveries such as King Tut's
Tomb)

<u>Invention</u>
typewriter
computer
telephone
dishwasher
Missouri
U.S.
(any response that indicates an appropriate invention)

Scoring:
3 elements = 3 points
2 elements = 2 points
1 element = 1 point
0 elements = 0 points

ITEM 3-2 point

Content Standard: VIII.B.2
Process Standard   1.6

First answer: The population would decrease or die out.

Second answer: The bees will not be able to survive; therefore, they will not be able to
                   pollinate the plants; therefore, there will be no plant reproduction.

Scoring:
2 elements = 2 points
1 element = 1 point
0 elements = 0 points

ITEM 4-2 points

Content Standard:	VII.C.2
Process Standard	1.10, 2.1

Possible answers:
Hair/fur   AND if hair/fur, then helps keep warm/helps camouflage
Milk (mammary gland)   AND   if milk, then feeds young
Larger/complex brain   AND   if brain, learn more things to survive

Scoring:
2 elements = 2 points
1 element = 1 point
0 elements = 0 points

ITEM 5-2 points

Content Standard:	III.C.4
Process Standard:	1.10

Answers:
WHY: They are made of metals so they can conduct electricity.
(Metals attract lightning is acceptable.)
HOW: Ligntning rods provide a safe path, or ground, for lightning to follow into Earth rather than into a building.
The electrical energy in lightning is directed into the ground through the lightning rod.

Scoring:
2 elements = 2 points
1 element = 1 point
0 elements = 0 points

ITEM 6-2 points

Content Standard:	VIII.A.5
Process Standard:	1.6, 1.10, 2.1

First answer:
Predator-prey
The foxes eat the rabbits

Second answer:
(any response indicating that the rabbits are food for the foxes, and since there is more food, the fox population will increase.)

Scoring:
2 elements = 2 points
1 element = 1 point
0 elements = 0 points

ITEM 7-1 point

      Content Standard: VIII.B.2
      Process Standard: 1.6, 1.10, 2.1

      First answer: Natural selection has greater effect in a changing/unstable environment.

      Explanation: Any response indicating that in a changing environment, some animals will not be adapted while others will be adapted to the new, fluctuating conditions, ones that are not adapted will die (and become extinct), while those that are adapted will survive and continue to have offspring.

      NOTE: First answer may be implied in the second answer.

      Scoring: 1 correct answer in either blank   = 1 point
                        0 correct answers in either blank = 0 points

ITEM 8-4 points

      Content Standard: IVI.C.1
      Process Standard: 1.6, 1.10

      First answer: Place a "P" at the highest points of the swing and a "K" at the lowest point of the swing.

      Second answer: 1. Friction
                         2. Air resistance (wind)

      Third answer: changed into heat/ mechanical **energy**/ sound

      scoring: 4 elements = 4 points
                        3 elements = 3 points
                        2 elements = 2 points
                        1 element   = 1 point
                        0 elements = 0 points

PERFORMANCE EVENT ITEM SCORING GUIDE

ITEM 1-3 points

    Content Standard: I.B. 1
    Process Standards: 1.3

    Possible answers: Direction of throw
    Force of throw
    Breeze/air currents
    Throwing skill
    Humidity
    Air Pressure
    Height of release
    (Any response indicating a clearly defined non-design variable)

    Scoring: 3 elements = 3 points
    2 elements = 2 points
    1 element = 1 point
    0 elements = 0 points

ITEM 2-3 points

    Content Standard: I.B.1
    Process Standards: 1.3

    Possible answers: Direction of throw-always throw in the same direction
    Force of throw-same person does each throw with same force applied
    Breeze/air currents-throw in windless area/place
    Throwing skill-same person does each throw
    Humidity-do all trials at the same time
    Air pressuredo all trials at the same time
    (Any response indicating a logical way to control the variable listed)

    Scoring: 4 elements = 4 points
    3 elements = 3 points
    2 elements = 2 points
    1 element = 1 point
    0 elements = 0 points

ITEM 3—1 point

    Content Standard: I.B.1
    Process Standards: 1.3, 2.1

    Answer: To be sure that differences in flight time are due to the design of the glider, not other variables.

    Scoring: One element = 1 point
                 Other   = 0 points

ITEM 4-3 **points**

    Content Standard   I.B.1
    Process Standards: 1.3, 2.1

    Answers: Procedure includes controls of three variables listed by student; if the student has not listed variables to control in Item 1 or Item 2 and doesn't include them here either, no credit is given for this answer.

                          Procedure includes at least 2 trial throws with each glider.

                          Procedure refers to use of stopwatch or watch with second hand to measure time aloft.

    Scoring: 3 elements = 3 points
                 2 elements = 2 points
                 1 element = 1 point
                 0 elements = 0 points

ITEM 5-2 **points**

    Content Standard :   I.B.1
    Process Standard: 1.8, 2.1

    Answers: Table includes heading for 3 glider types.
                          "Flight Time" or "Time Aloft", etc., is either the title or a heading.

    scoring: 2 elements = 2 points
                 1 element = 1 point
                 0 elements = 0 points